Proceedings of SPIE - The International Society for Optical Engineering 2006 vol.6181

Spectral line shape identification with continuous wavelet transform

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Abstract

A lot of methods that allow analyzing of complex contours are known. In the case of the analytical type of the peak is known the least squares method is usually used. Nevertheless, if the noise level is high enough, LSM method can't be used because of the large distortions of the results. In this paper alternative way based on a wavelet-derivative spectroscopy to analyze complex contours is suggested. The efficiency of the method is demonstrated using the model data and experimental IR spectrum of polyetherimide.

http://dx.doi.org/10.1117/12.675147

Keywords

Complex spectra, Continues wavelet transform, Decomposition, Derivative spectrometry, Resolution